

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

- 1     1.     (Previously Presented) A method for use in a wireless communications network for  
2     allocating spectral resource made up of a plurality of resource units in a multiple access wireless  
3     link extending between a partition of a base station and at least one child user equipment of the  
4     partition, wherein the network has at least one base station which has at least two partitions or  
5     the network has at least two base stations, each having at least one partition, the method  
6     comprising:  
7         establishing a number of resource units making up a fixed allocation of resource units,  
8         said fixed allocation of resource units being the same for all user equipments of the network;  
9         allocating the fixed allocation of resource units to each child user equipment in the  
10     partition.
- 1     2.     (Previously Presented) A method according to claim 1 wherein the number of resource  
2     units making up fixed allocation is established by:  
3         determining a measure of a maximum likely number of child user equipments per  
4     partition of the network;  
5         calculating the fixed allocation of resource units based on the ratio of a number of  
6     resource units in the partition per unit time to the measure.
- 1     3.     (Original) A method according to claim 1 wherein the fixed allocation is a selected  
2     minimum number of resource units.
- 1     4.     (Original) A method according to claim 1 wherein the spectral resource is made up of a  
2     number of frequency channels and each resource unit is a sub-set of the spectral resource smaller  
3     than a frequency channel.

5. (Original) A method according to claim 2 wherein the measure of the maximum likely number of user equipments per partition is derived according to a Poisson distribution of the average number of user equipments per partition of the network.

6. (Currently Amended) ~~A method according to claim 2~~ A method for use in a wireless communications network for allocating spectral resource made up of a plurality of resource units in a multiple access wireless link extending between a partition of a base station and at least one child user equipment of the partition, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, the method comprising:

establishing a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network;

allocating the fixed allocation of resource units to each child user equipment in the partition,

wherein the number of resource units making up fixed allocation is established by:

determining a measure of a maximum likely number of child user equipments per partition of the network;

calculating the fixed allocation of resource units based on the ratio of a number of resource units in the partition per unit time to the measure,

wherein the fixed allocation of resource units is calculated according to the following equation:

$$F = T/M$$

where

F = number of resource units making up the fixed allocation;

T = number of resource units per unit time; and

M = maximum likely number of user equipments per partition.

7. (Original) A method according to claim 1 wherein resource units which are not allocated in the fixed allocation of resource units to child user equipments remain unallocated to user equipments.

1 8. (Original) A method according to claim 1 wherein the method additionally comprises  
2 allocating remaining resource units which are not allocated in the fixed allocation of resource  
3 units to child user equipments, hereafter remaining resource units, to child user equipments in the  
4 partition by:

5 determining the gain of the radio link between the partition and each child user  
6 equipment; and

7 allocating the remaining resource units among the child user equipments by prioritising  
8 user equipments having a high gain link.

1 9. (Original) A method according to claim 1 wherein the method additionally comprises  
2 allocating remaining resource units which are not allocated in the fixed allocation of resource  
3 units to child user equipments, hereafter remaining resource units, to child user equipments in the  
4 partition by:

5 determining the gain of the radio link between the partition and each child user  
6 equipment; and

7 allocating the remaining resource units among the child user equipments in the partition  
8 in proportion to the gain of the radio links to the child user equipments.

1 10. (Original) A method according to claim 1 additionally comprising:

2 determining the gain of the radio link between the partition and each child user  
3 equipment of the partition; and

4 regulating the transmit power of each child user equipment according to the determined  
5 gain for that user equipment such that lower gain user equipments transmit with higher power  
6 than higher gain user equipments.

1 11. (Original) A method according to claim 1 additionally comprising:

2 determining the gain of the radio link between the partition and each child user  
3 equipment of the partition; and

4 regulating the transmit power of each child user equipment such that the transmit power  
5 is inversely proportional to the gain.

1 12. (Original) Computer executable software code stored on a computer readable medium for  
2 making a computer execute the method of claim 1.

1 13. (Original) A programmed computer, which stores computer executable program code for  
2 making the computer execute the method of claim 1.

1 14. (Original) A computer readable medium having computer executable software code  
2 stored thereon, which code is for making a computer execute the method of claim 1.

1 15. (Previously Presented) A wireless communication network, wherein the network has at  
2 least one base station which has at least two partitions or the network has at least two base  
3 stations, each having at least one partition, via which at least one child user equipment  
4 communicates over a wireless link which link comprises spectral resource made up of a plurality  
5 of resource units wherein the network includes a processing block configured to establish a  
6 number of resource units making up a fixed allocation of resource units, said fixed allocation of  
7 resource units being the same for all user equipments of the network and to allocate the fixed  
8 allocation of resource units to each child user equipment in the partition.

1 16. (Original) A network according to claim 15 wherein the number of resource units making  
2 up the fixed allocation is established by determining a measure of a maximum likely number of  
3 child user equipments per partition and calculating the fixed allocation of resource units based on  
4 the ratio of a number of resource units in the partition per unit time to the measure.

1 17. (Original) A network according to claim 15 wherein the fixed allocation is a selected  
2 minimum number of resource units.

1 18. (Original) A network according to claim 15 wherein the spectral resource is made up of a  
2 number of frequency channels and each resource unit is a sub-set of the spectral resource smaller  
3 than a frequency channel.

1 19. (Original) A network according to claim 16 wherein the measure of the maximum likely  
2 number of user equipments per partition is derived according to a Poisson distribution of the  
3 average number of user equipments per partition.

1 20. (Original) A network according to claim 15 wherein resource units which are not  
2 allocated in the fixed allocation of resource units to child user equipments remain unallocated to  
3 user equipments.

1 21. (Original) A network according to claim 15 wherein, for a given partition, the processing  
2 block is configured to allocate remaining resource units which are not allocated in the fixed  
3 allocation of resource units to each user equipment by allocating the remaining resource units  
4 among the child user equipments by prioritising user equipments having a high gain link to the  
5 partition.

1 22. (Original) A network according to claim 15 wherein, for a given partition, the processing  
2 block is configured to allocate remaining resource units which are not allocated in the fixed  
3 allocation of resource units to each user equipment by allocating the remaining resource units  
4 among the child user equipments in the partition in proportion to the gain of the radio links  
5 between the child user equipments and the partition.

1 23. (Original) A network according to claim 15 wherein the transmit power of each child user  
2 equipment is regulated according to the gain between that user equipment and its partition such  
3 that lower gain user equipments transmit with higher power than higher gain user equipments.

1 24. (Previously Presented) A resource allocation controller for use in a wireless  
2 communications network for allocating spectral resource made up of a plurality of resource units  
3 in a multiple access wireless link extending between a partition of a base station and at least one  
4 child user equipment of the partition, wherein the network has at least one base station which has  
5 at least two partitions or the network has at least two base stations, each having at least one  
6 partition, wherein the controller is configured to establish a number of resource units making up  
7 a fixed allocation of resource units, said fixed allocation of resource units being the same for all  
8 user equipments of the network; and to allocate the fixed allocation of resource units to each  
9 child user equipment in the partition.

1 25. (Original) A controller according to claim 24 wherein the number of resource units  
2 making up the fixed allocation of resource units is established by obtaining a measure of a  
3 maximum likely number of child user equipments per partition of the network and obtaining a  
4 fixed allocation of resource units based on the ratio of a number of resource units in the partition  
5 per unit time to the measure.

1 26. (Original) A controller according to claim 24 wherein the spectral resource is made up of  
2 a number of frequency channels and each resource unit is a sub-set of the spectral resource  
3 smaller than a frequency channel.

1 27. (Original) A controller according to claim 25 wherein the measure of the maximum likely  
2 number of user equipments per partition is derived according to a Poisson distribution of the  
3 average number of user equipments per partition.

1 28. (Original) A controller according to claim 24 wherein the fixed allocation is a selected  
2 minimum number of resource units.

1 29. (Original) A controller according to claim 24 wherein resource units which are not  
2 allocated in the fixed allocation of resource units to child user equipments remain unallocated to  
3 user equipments.

1 30. (Original) A controller according to claim 24 which is configured to allocate remaining  
2 resource units which it did not allocate in the fixed allocation of resource units by prioritising  
3 child user equipments of the partition having a high gain link to the partition.

1 31. (Original) A controller according to claim 24 which is configured to allocate remaining  
2 resource units which it did not allocate in the fixed allocation of resource units by allocating the  
3 remaining resource units among the child user equipments in the partition in proportion to the  
4 gain of the radio links to the child user equipments.

1 32. (Original) A controller according to claim 24 for deployment in a network in which the  
2 transmit power of each child user equipment is regulated according to the gain between that user  
3 equipment and its partition such that lower gain user equipments transmit with higher power than  
4 higher gain user equipments,

1 33. (Previously Presented) Computer executable software code stored on a computer  
2 readable medium for establishing a number of resource units making up a fixed allocation of  
3 spectral resource made up of a plurality of resource units in a multiple access wireless link of a  
4 wireless communication network, wherein the network has at least one base station which has at  
5 least two partitions or the network has at least two base stations, each having at least one  
6 partition, the code comprising:

7 code to determine a measure of a maximum likely number of child user equipments per  
8 network partition; and

9 code to determine a fixed allocation of resource units based on the ratio of a number of  
10 resource units in the link per unit time to the measure, said fixed allocation of resource units  
11 being the same for all user equipments of the network,.

1 34. (Previously Presented) A programmed computer for establishing a number of resource  
2 units making up a fixed allocation of spectral resource made up of a plurality of resource units in  
3 a multiple access wireless link of a wireless communication network, which stores computer  
4 executable program code, wherein the network has at least one base station which has at least  
5 two partitions or the network has at least two base stations, each having at least one partition,  
6 said code includes:

7 code for determining a measure of a maximum likely number of child user equipments  
8 per network partition; and

9 code for determining the fixed allocation of resource units, said fixed allocation of  
10 resource units being same for all user equipments of the network, based on the ratio of a number  
11 of resource units in the link per unit time to the measure.

1 35. (Previously Presented) A computer readable medium having computer executable  
2 software code stored thereon, which code is for establishing a number of resource units making  
3 up a fixed allocation of spectral resource made up of a plurality of resource units in a multiple  
4 access wireless link of a wireless communication network, wherein the network has at least one  
5 base station which has at least two partitions or the network has at least two base stations, each  
6 having at least one partition, wherein the code is for carrying out the following:

7 determining a measure of a maximum likely number of child user equipments per  
8 network partition; and

9 determining a fixed allocation of resource units based on the ratio of a number of  
10 resource units in the link per unit time to the measure, , said fixed allocation of resource units -  
11 being the same for all user equipments of the network,.



1 36. (Previously Presented) Computer executable software code stored on a computer readable  
2 medium for allocating a proportional allocation of spectral resource made up of a plurality of  
3 resource units in a multiple access wireless link of a wireless communication network, wherein  
4 the network has at least one base station which has at least two partitions or the network has at  
5 least two base stations, each having at least one partition, the code comprising:

6 code for discarding resource units allocated to child user equipments in a fixed allocation  
7 so as to determine remaining resource units, said fixed allocation of resource units being the  
8 same for all user equipments of the network;

9 code for determining the gain of the radio link between the partition and each child user  
10 equipment; and

11 code for allocating the remaining resource units among the child user equipments by  
12 prioritising user equipments having a high gain link.

1 37. (Previously Presented) A wireless communication network, wherein the network has at  
2 least one base station which has at least two partitions or the network has at least two base  
3 stations, each having at least one partition, via which at least one child user equipment  
4 communicates over a wireless link which link comprises spectral resource made up of a plurality  
5 of resource units wherein the network includes processing means for establishing a number of  
6 resource units making up a fixed allocation of resource units, said fixed allocation of resource  
7 units being the same for all user equipments of the network and means for allocating the fixed  
8 allocation of resource units to each child user equipment in the partition.

1 38. (Previously Presented) A resource allocation controller for use in a wireless  
2 communications network for allocating spectral resource made up of a plurality of resource units  
3 in a multiple access wireless link extending between a partition of a base station and at least one  
4 child user equipment of the partition, wherein the network has at least one base station which has  
5 at least two partitions or the network has at least two base stations, each having at least one  
6 partition, wherein the controller comprises means for establishing a number of resource units  
7 making up a fixed allocation of resource units, said fixed allocation of resource units being the  
8 same for all user equipments of the network and means for allocating the fixed allocation of  
9 resource units to each child user equipment in the partition.

1 39. (Previously Presented) A method for use in a wireless communications network for  
2 allocating spectral resource made up of a plurality of resource units in a multiple access wireless  
3 link extending between a partition of a base station and at least one child user equipment of the  
4 partition, wherein the network has at least one base station which has at least two partitions or  
5 the network has at least two base stations, each having at least one partition, the method  
6 comprising:

7 determining a measure of a maximum likely number of child user equipments per  
8 partition of the network;

9 calculating a fixed allocation of resource units based on the ratio of a number of resource  
10 units in the partition per unit time to the measure, said fixed allocation of resource units -being  
11 the same for all user equipments of the network,; and

12 allocating the fixed allocation of resource units to each child user equipment in the  
13 partition.

1 40. (Previously Presented) A method for use in a wireless communications network for  
2 allocating spectral resource made up of a plurality of resource units in a multiple access wireless  
3 link extending between a partition of a base station and at least one child user equipment of the  
4 partition, wherein the network has at least one base station which has at least two partitions or  
5 the network has at least two base stations, each having at least one partition, the method  
6 comprising:

7 establishing a minimum number of resource units making up a fixed allocation of  
8 resource units, said fixed allocation of resource units being the same for all user equipments of  
9 the network;

10 allocating the fixed allocation of resource units to each child user equipment in the  
11 partition; and

12 allocating remaining resource units which are not allocated in the fixed allocation of  
13 resource units to child user equipments, hereafter remaining resource units, to child user  
14 equipments in the partition by:

15 determining the gain of the radio link between the partition and each child user  
16 equipment; and

17 allocating the remaining resource units among the child user equipments by  
18 prioritising user equipments having a high gain link.